

WHAT IS CLAIMED IS:

1. The method of reducing the moiré effect, the method comprising:
  - providing an image projector for projecting an image bearing beam of light along an image path; and
  - providing a display screen on said image path such that said image bearing beam forms an image comprised of a plurality of rows of pixels when said image bearing beam strikes said display screen, said display screen having a plurality of light impeding stripe structures oriented  $45 \pm 15$  degrees relative to said rows of pixels in said image.
2. The method of Claim 1, wherein said providing an image projector comprises providing an image projector projecting an image-bearing beam of light forming an image comprised of an orthogonal array of pixels arranged in rows and columns.
3. A rear-projection display screen comprising:
  - a lenticular lens layer having shaped lens elements for receiving modulated light;
  - a dark-stripe layer attached to said lenticular lens layer, said dark-stripe layer comprising a plurality of dark-stripes separated by stripes allowing said modulated light to pass through said

dark-stripe layer, said dark-stripes rotated 45 ± 15 degrees relative to an edge of said screen.

4. The display screen of Claim 3 comprising:
  - a diffusion layer attached to said dark-stripe layer.
5. The display screen of Claim 3 comprising:
  - a diffusion layer attached to said dark-stripe layer opposite said lenticular lens layer.
6. The display screen of Claim 3 comprising:
  - a diffusion layer attached to said dark-stripe layer; and
  - a hard coating applied to said diffusion layer to protect said screen.
7. The display screen of Claim 3 wherein said rotated dark-stripe structure maintains the contrast of said screen while providing a margin against moiré effects in said screen by a factor of 1.15 to 1.41, relative to a display screen having a 0 degree rotation angle.
8. The display screen of Claim 3, wherein said shaped lens elements are orientated to optimize the brightness and viewing angle of said screen in the vertical and horizontal directions.

9. The display screen of Claim 3, wherein said shaped lens elements are orientated to increase the viewing angle of said screen in the horizontal direction.
10. The display screen of Claim 3, wherein said shaped lens elements are staggered to follow the orientation of said stripes allowing said modulated light to pass through.
11. A display, comprising:
  - a projection engine projecting an image bearing beam of light along a light path, said image borne by said image bearing beam of light comprised of a plurality of rows of pixels;
  - a display screen positioned to receive said image bearing beam of light, said screen having a dark-stripe structure rotated  $45 \pm 15$  degrees relative to said rows of pixels.
12. The display of Claim 11 comprising:
  - a cabinet housing said projection engine and attached to said display screen.
13. The display of Claim 11 comprising:
  - a fold mirror on said light path.
14. The display of Claim 11, said display screen comprising:
  - a lenticular lens layer having shaped lens elements for receiving modulated light;

a dark-stripe layer attached to said lenticular lens layer, said dark-stripe layer comprising a plurality of dark-stripes separated by stripes allowing said modulated light to pass through said dark-stripe layer, said dark-stripes rotated 45 ± 15 degrees relative to an edge of said screen.

15. The display of Claim 14 comprising:

a diffusion layer attached to said dark-stripe layer.

16. The display of Claim 14 comprising:

a diffusion layer attached to said dark-stripe layer opposite said lenticular lens layer.

17. The display of Claim 14 comprising:

a diffusion layer attached to said dark-stripe layer; and

a hard coating applied to said diffusion layer to protect said screen.

18. The display of Claim 14 wherein said rotated dark-stripe structure maintains the contrast of said screen while providing a margin against moiré effects in said screen by a factor of 1.15 to 1.41, relative to a display screen having a 0 degree rotation angle.

19. The display of Claim 14, wherein said shaped lens elements are orientated to optimize the brightness

and viewing angle of said screen in the vertical and horizontal directions.

20. The display of Claim 14, wherein said shaped lens elements are orientated to increase the viewing angle of said screen in the horizontal direction.
21. The display of Claim 14, wherein said shaped lens elements are staggered to follow the orientation of said stripes allowing said modulated light to pass through.
22. The display of Claim 11, said projection engine comprising at least one liquid crystal device.
23. The display of Claim 11, said projection engine comprising at least one digital micromirror device.
24. The display of Claim 11, said projection engine comprising:
  - a light source emitting white light;
  - a rotating color filter wheel filtering said white light and emitting sequential red-green-blue light; and
  - a digital micromirror device modulating said sequential red-green-blue light.
25. The display of Claim 11, said projection engine comprising:
  - a light source emitting white light along a light path;

an integrating rod along said light path;  
a rotating color filter wheel filtering said white  
light and emitting sequential red-green-blue  
light;  
a digital micromirror device modulating said  
sequential red-green-blue light;  
a total internal reflective prism on said light path  
directing said sequential red-green-blue light  
onto and off of said digital micromirror device.

26. A display, comprising:

a projection engine projecting an image bearing beam  
of light along a light path, said image borne by  
said image bearing beam of light comprised of a  
plurality diagonal groups of pixels having  
abutting sides;  
a display screen positioned to receive said image  
bearing beam of light, said screen having a dark-  
stripe structure oriented  $45 \pm 15$  degrees relative  
to said diagonal groups of pixels having abutting  
sides.

27. The display of Claim 26 comprising:

a cabinet housing said projection engine and  
attached to said display screen.

28. The display of Claim 26 comprising:

a fold mirror on said light path.

29. The display of Claim 26, said display screen comprising:  
a lenticular lens layer having shaped lens elements for receiving modulated light;  
a dark-stripe layer attached to said lenticular lens layer, said dark-stripe layer comprising a plurality of dark-stripes separated by stripes allowing said modulated light to pass through said dark-stripe layer, said dark-stripes rotated  $45 \pm 15$  degrees relative to an edge of said screen.

30. The display of Claim 29 comprising:  
a diffusion layer attached to said dark-stripe layer.

31. The display of Claim 29 comprising:  
a diffusion layer attached to said dark-stripe layer opposite said lenticular lens layer.

32. The display of Claim 29 comprising:  
a diffusion layer attached to said dark-stripe layer; and  
a hard coating applied to said diffusion layer to protect said screen.

33. The display of Claim 29 wherein said rotated dark-stripe structure maintains the contrast of said screen while providing a margin against moiré effects in said screen by a factor of 1.15 to 1.41,

relative to a display screen having a 0 degree rotation angle.

34. The display of Claim 29, wherein said shaped lens elements are orientated to optimize the brightness and viewing angle of said screen in the vertical and horizontal directions.
35. The display of Claim 29, wherein said shaped lens elements are orientated to increase the viewing angle of said screen in the horizontal direction.
36. The display of Claim 29, wherein said shaped lens elements are staggered to follow the orientation of said stripes allowing said modulated light to pass through.
37. The display of Claim 26, said projection engine comprising at least one liquid crystal device.
38. The display of Claim 26, said projection engine comprising at least one digital micromirror device.
39. The display of Claim 26, said projection engine comprising:
  - a light source emitting white light;
  - a rotating color filter wheel filtering said white light and emitting sequential red-green-blue light; and
  - a digital micromirror device modulating said sequential red-green-blue light.

40. The display of Claim 26, said projection engine comprising:  
a light source emitting white light along a light path;  
an integrating rod along said light path;  
a rotating color filter wheel filtering said white light and emitting sequential red-green-blue light;  
a digital micromirror device modulating said sequential red-green-blue light;  
a total internal reflective prism on said light path directing said sequential red-green-blue light onto and off of said digital micromirror device.